AM3A-Z

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SIP6 Package

Aimtec is pleased to introduce its first ever 3-Watt single and dual output DC/DC converter in a compact SIP6 package. With a 4:1 ultra-wide input range, from 4.5-75VDC, the AM3A-Z comes with 1600VDC isolation and a regulated output. This is the smallest regulated and isolated 3-Watt converter ever designed by Aimtec!

This compact design comes with a high efficiency up to 84%, no minimum load requirement and continuous short circuit protection. Furthermore, the ambient operating temperature is from -40°C to +76°C with full power up to 71°C.

This truly innovative series can be used for applications that have limited board space such as mobile phone chargers, portable electronics, IoT and wireless applications.

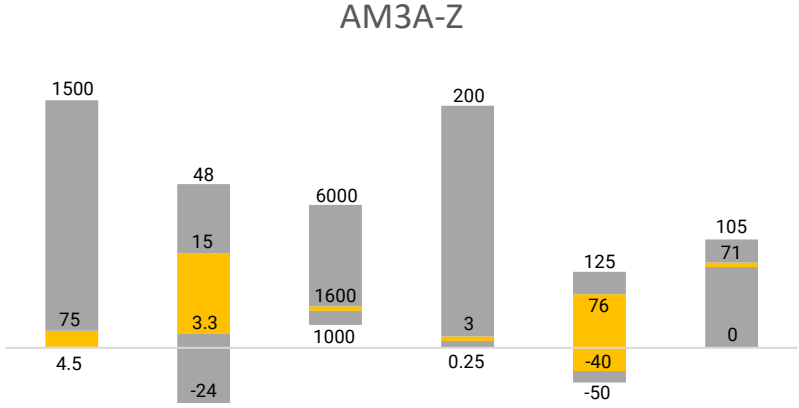
Features

- I/O Isolation 1600VDC
- Continuous Short circuit protection
- Operating Temp: -40 °C to +76 °C
- Compact Footprint and high-power Density
- 4:1 Input Voltage Range
- Compact SIP6
- ON/OFF Control
- Efficiency up to 84%

RoHS

3yr Warranty

Summary



Training

Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

IoT | Industrial | Telecom | Portable Equipment

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current max (A)	Output Current max (mA)	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency (%)
AM3A-1203SZ	12 (4.5 - 18)	3.3	0.257	700	1600	3300	75
AM3A-1205SZ	12 (4.5 - 18)	5	0.309	600	1600	1680	81
AM3A-1212SZ	12 (4.5 - 18)	12	0.301	250	1600	820	83
AM3A-1215SZ	12 (4.5 - 18)	15	0.301	200	1600	680	83
AM3A-2403SZ	24 (9 - 36)	3.3	0.127	700	1600	3300	76
AM3A-2405SZ	24 (9 - 36)	5	0.152	600	1600	1680	82
AM3A-2412SZ	24 (9 - 36)	12	0.149	250	1600	820	84
AM3A-2415SZ	24 (9 - 36)	15	0.149	200	1600	680	84
AM3A-4803SZ	48 (18 - 75)	3.3	0.065	700	1600	3300	74
AM3A-4805SZ	48 (18 - 75)	5	0.077	600	1600	1680	81
AM3A-4812SZ	48 (18 - 75)	12	0.077	250	1600	820	81
AM3A-4815SZ	48 (18 - 75)	15	0.076	200	1600	680	82

Dual Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current max (A)	Output Current max (A)	Isolation (VAC)	Maximum capacitive Load (µF)	Efficiency (%)
AM3A-1205DZ	12 (4.5 - 18)	±5	0.313	±300	1600	±1000	80
AM3A-1212DZ	12 (4.5 - 18)	±12	0.305	±125	1600	±470	82
AM3A-1215DZ	12 (4.5 - 18)	±15	0.301	±100	1600	±330	83
AM3A-2405DZ	24 (9 - 36)	±5	0.154	±300	1600	±1000	81
AM3A-2412DZ	24 (9 - 36)	±12	0.151	±125	1600	±470	83
AM3A-2415DZ	24 (9 - 36)	±15	0.149	±100	1600	±330	84
AM3A-4805DZ	48 (18 - 75)	±5	0.079	±300	1600	±1000	79
AM3A-4812DZ	48 (18 - 75)	±12	0.078	±125	1600	±470	80
AM3A-4815DZ	48 (18 - 75)	±15	0.078	±100	1600	±330	80

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	12V 24V 48V	4.5 – 18 9 – 36 18 - 75		VDC
Filter	Capacitor			

Startup time	Nominal input and resistive load	0.03		S
Absolute maximum rating	12V models 24V models 48V models		25 50 100	VDC
Input reflected ripple current			20	mA pk-pk
On/Off Control	ON – high impedance or open; OFF – 2-4mA input current through 1KΩ (standby 2.5mA max)			

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	3 sec	1600		VDC
Resistance		>1000		MOhm
Capacitance			40	pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Cross regulation (Dual)	25% load on one output, 100% load on second output	±5		%
Line regulation	Full load, main input range		±0.2	%
Load regulation	0-100% load		±1	%
Short circuit protection	Continuous, Auto recovery			
Temperature coefficient		±0.02		%/ °C
Ripple & Noise*	Single Output		150	mV pk-pk
	Dual Output		100	
Transient recovery time	100%-25% load, 25% load step change	250		uS
Transient response deviation	100%-25% load, 25% load step change	±5		%

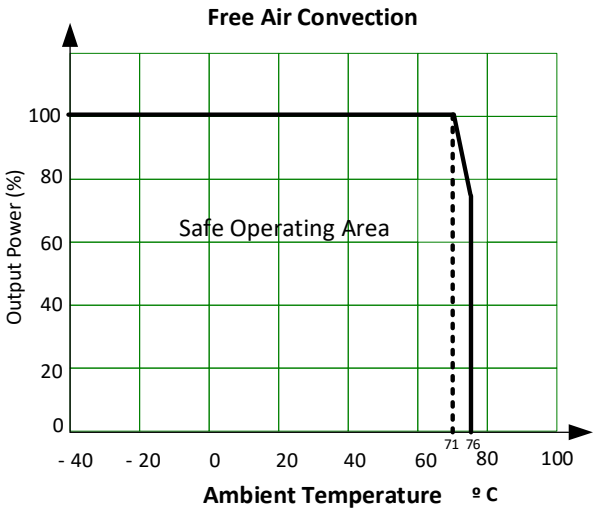
* 20MHz bandwidth with a 0.1uF CC and a 10uF EC

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	100		KHz
Operating temperature	With derating at 71	-40 to +76		°C
Storage temperature		-55 to +125		°C
Maximum Case temperature			100	°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Case material	Black plastic (flammability to UL 94V-0)			
Weight		3.85		g
Dimensions (L x W x H)	0.69 x 0.40 x 0.48 inches 17.52 x 10.02 x 12.20 mm			
MTBF	TBD hrs (MIL-HDBK -217F, t=+25°C) / Full Load			

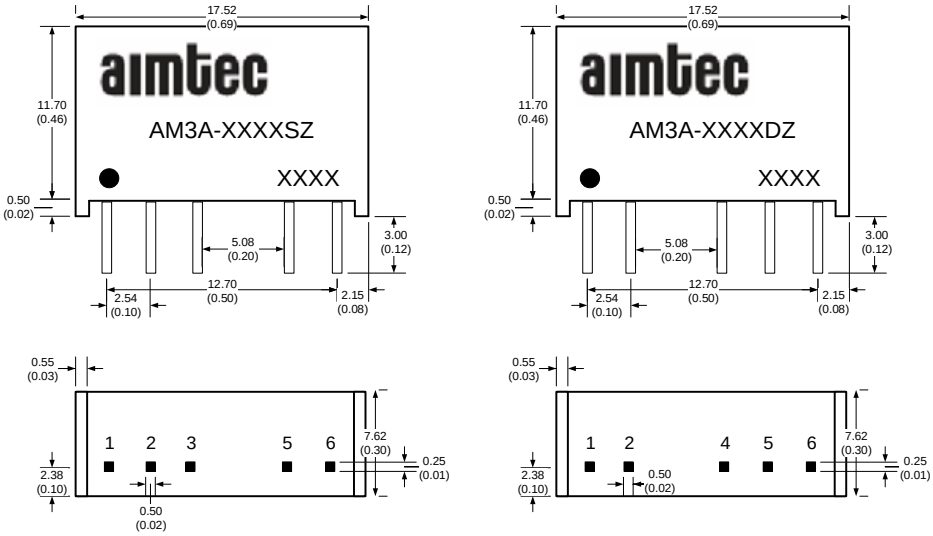
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

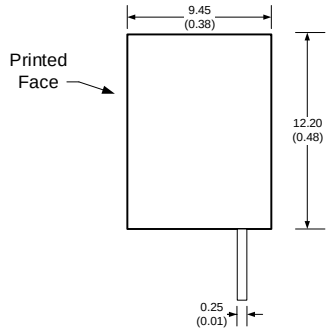
Derating



Pin Out Specifications		
Pin	Single	Dual
1	-Input	-Input
2	+Input	+Input
3	ON/OFF ctrl	No pin
4	No pin	+V Output
5	+V Output	Common
6	-V Output	-V Output

Dimensions





NOTE: Unit mm [inch]
Pin tolerances: 0.10mm [0.004inch]
General tolerances: 0.25mm [0.010inch]

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